

# CE-25

EE23BTECH11063 - Vemula Siddhartha

**Question:**

The following function is defined over the interval  $[-L, L]$  :

$$f(x) = px^4 + qx^5$$

It is expressed as a Fourier series,

$$f(x) = a_0 + \sum_{n=1}^{\infty} \left\{ a_n \sin\left(\frac{\pi x}{L}\right) + b_n \cos\left(\frac{\pi x}{L}\right) \right\},$$

which options amongst the following are true?

- 1)  $a_n, n = 1, 2, \dots, \infty$  depend on  $p$
- 2)  $a_n, n = 1, 2, \dots, \infty$  depend on  $q$
- 3)  $b_n, n = 1, 2, \dots, \infty$  depend on  $p$
- 4)  $b_n, n = 1, 2, \dots, \infty$  depend on  $q$